Contents

networks an international journal volume 19, number 1

An SST-Based Algorithm for the Steiner Problem in Graphs
J. E. Beasley 1

Some Properties of 2-threshold Graphs
P. L. Hammer, N. V. R. Mahadev, and U. N. Peled 17

Minimum Order Graphs with Specified Diameter, Connectivity, and Regularity
V. Krishnamoorthy, K. Thulasiraman, and M. N. S. Swamy 25

Transitively Reduced and Transitively Closed Event Networks
M. Mrozek 47

Extremal Connectivity and Vulnerability in Graphs
L. L. Doty 73

Optimal Enclosing Regions in Planar Graphs
D. Bienstock and C. L. Monma 79

Implementing an "Exact" Newton Method for Separable Convex Transportation Problems
J. G. Klincewicz 95

Paths, Chains, and Antipaths
D. de Werra and C. Pasche 107

Solving Nonlinear Multiple-Facility Network Location Problems
J. N. Hooker 117

Domination Theory and the Crapo β-Invariant
A. B. Huseby 135

The Minimum Augmentation of any Graph to a *K*-Edge-Connected Graph
G.-R. Cai and Y.-G. Sun 151

Book Review 173

networks an international journal volume 19, number 2

A Composite Algorithm for a Concave-cost Network Flow Problem
A. Balakrishnan and S. C. Graves 175

Triconnected Decomposition for Computing *K*-Terminal Network Reliability
R. K. Wood 203

On the Optimal Strongly Connected Orientations of City Street Graphs.II: Two East-West Avenues or North-South Streets
F. S. Roberts and Y. Xu 221
Connected Reorientations of Mixed Multigraphs
W. Shi and R. J. Juels 235
On Graphs with Polynomially Solvable Maximum-Weight Clique Problem
E. Balas and C. S. Yu 247
A Tree-Network Has the Fixed Point Property
M. Labbé and J.-F. Thisse 255
A Functional Equation for Finding the Largest Expected Capacity of a Graph
N. G. F. Sancho 261
Book Reviews 269

networks an international journal volume 19, number 3

On Optimal Cycle Bases of Graphs for Mesh Analysis of Networks
A. Kaveh 273
Exact Cuts in Networks
J. S. Provan and V. G. Kulkarni 281
Analysis of a Flow Problem with Fixed Charges
D. S. Hochbaum and A. Segev 301
Network Synthesis and Optimum Network Design Problems: Models, Solution Methods and Applications
M. Minoux 313
How to Find a Battleship
A. Fiat and A. Shamir 361
The Maximum Independent Set Problem for Cubic Planar Graphs
J. E. Burns 373

networks an international journal volume 19, number 4

An Algorithm for the Resource Constrained Shortest Path Problem
J. E. Beasley and N. Christofides 379
A Continuous-Time Network Simplex Algorithm
E. J. Anderson and A. B. Philpott 395

Designing Satellite Communication Networks by Zero-One Quadratic Programming
M. P. Helme and T. L. Magnanti 427

On Mean Distance in Certain Classes of Graphs
G. R. T. Hendry 451

A New Algorithm for General Matching Problems Using Network Flow Subproblems
R. Lessard, J.-M. Rousseau, and M. Minoux 459

Statistical Procedures for Estimating Branch Flows and Total Network Flow
C. E. Wells and J. R. Evans 481

networks an international journal volume 19, number 5

Edge-Vulnerability and Mean Distance
O. Favaron, M. Kouider, and M. Mahéo 493

Message Complexity Versus Space Complexity in Fault Tolerant Broadcast Protocols
S. Moran 505

Multiplicative Improvements in Network Reliability
T. B. Brecht and C. J. Colbourn 521

A Branch and Bound Algorithm for the Multiple Depot Vehicle Scheduling Problem
G. Carpaneto, M. Dell'Amico, M. Fischetti, and P. Toth 531

Reduction Tests for the Steiner Problem in Graphs
C. W. Duin and A. Volgenant 549

Balancing Large Social Accounting Matrices with Nonlinear Network Programming
S. A. Zenios, A. Drud, and J. M. Mulvey 569

A Solvable Routing Problem
E. N. Gilbert 587

The Continuous *p*-Median of a Network
P. Hansen and M. Labbé 595

The Path Set Polytope of an Acyclic Directed Graph with an Application to Machine Sequencing
J. H. Vande Vate 607

Book Reviews 615

networks an international journal volume 19, number 6

The Prize Collecting Traveling Salesman Problem
E. Balas 621

Tracing the Characteristic Curve of a Quadratic Black Box
J. Sun 637

On the Separation Number of a Graph
Z. Miller and D. Pritikin 651

On the Edge-Connectivity Vector of a Graph
L.M. Lesniak and R.E. Pippert 667

On the Construction of Minimal Broadcast Networks
L. Gargano and U. Vaccaro 673

A Comparison of Phase and Nonphase Network Flow Algorithms
C. Martel 691

Designing Optimal Fault-Tolerant Star Networks
A.A. Farrag and R.J. Dawson 707

A Location Model for a Facility Operating as an *M/G/k* Queue
R. Batta and O. Berman 717

networks an international journal volume 19, number 7

A Set-Partitioning-Based Exact Algorithm for the Vehicle Routing Problem
Y. Agarwal, K. Mathur, and H.M. Salkin 731

A General Dynamic Spatial Price Network Equilibrium Model With Gains and Losses
A. Nagurney and J. Aronson 751

On Designing a Network to Defend Against Random Attacks of Radius Two
A.S. Finbow and B.L. Hartnell 771

Probabilistic Analysis of an LP Relaxation Bound for the Steiner Problem in Networks
A. Jain 793

Time Bounds on Fault-Tolerant Broadcasting
D. Peleg and A.A. Schäffer 803

Author Index to Volume 19 829

Subject Index to Volume 19 831

Volume Contents iii